

1,0797
S/263/62/000/017/005/011
1011/1211

24-0000
AUTHORS: Shtromberger, L. V. and Grigor'yev, M. A.

TITLE: A piezo-electric manometric transducer

PERIODICAL: Referativnyy zhurnal. Otdel'nyy vypusk, Izmeritel'naya tekhnika, no. 17, 1962, 31-32, abstract 32.17.208. "Nauchn. ezhegodnik. Saratovsk. un-ta. Fiz. fak. i. N.-i. in-t. mekhan. i fiz., 1955" Saratov, 1960, 23-27

TEXT: A low inertia manometric transducer is developed. A piezo-electric quartz plate which is a part of a self-oscillating electro mechanical system serves as its basic element. The active resistance (C) of the plate-resonator is composed of C caused by internal friction, by friction in the supports and in the surface layers and of C caused by radiation losses. The last component depends on the environment surrounding the quartz, which makes it possible to establish a relation between a variation of the active C of the quartz and a change in the pressure of the surrounding gas. The known magnitude of the radiation C of a flat-bottom oscillating in an infinite screen is used for the evaluation of the equation connecting the overall equivalent C of the quartz with the radiation losses. It is shown that the overall equivalent C of the quartz will be a linear function of the gas density and pressure alone if the friction magnitude in the supports and the surface friction losses are stabilised. The electric circuit of the instrument excites the oscillations in the piezo-electric plate and allows for a continuous measurement of its equivalent active C. Pressures in the interval of 10^{-1} to 10^3 mm Hg can be measured by this method. There are 2 figures. Bibliography: 4 titles.

[Abstracter's note: Complete translation.]

Card 1/1

ARTEM'YEV, Vladislav Nikolayevich; SHTROMBERGER, Lev Viktorovich;
NOSKOVA, R.F., red.; GOLUBKOV, P.V., prof., red.; ZENIN, V.V., tekhn.
red.

[Laboratory manual on high-vacuum physics] Praktikum po
fizike vysokogo vakuuma. Saratov, Izd-vo Saratovskogo univ.,
1963. 325 p. (MIRA 17:2)

SURENKOV, N.A.; SHTROMILO, M.I.

Intensification of the rectification process by means of vibrations. *Ferm. i spirt.prom.* 30 no.4:4-7 '64.

(MIRA 18:12)

1. Kiyevskiy tekhnologicheskij institut pishchevoy promyshlennosti imeni Mikoyana.

SHTROV, I. I., YATSIMIRSKAYA, M. K., BILIBIN, A. F., BOCHAROVA, T. V., SINAYKO, G. I.,
and SAVITSKAYA, YE. P.

"Concerning the Question of the Possibility of a Prolonged Carrying of
Prowazki's Rickettsiosis." [paper read at an unidentified scientific
conference held by the institute during the first half of 1955.]
Proceedings of Inst. Epidem and Microbiol im. Gamaleya 1954-56.

Typhus Division, Krontovskaya, M. K., head, Inst. Epidem and Microbiol.
im. Gamaleya, AMS USSR.

SO: Sum 1186, 11 Jan 57.

USSR / Cultivated Plants. Cereal Crops.

M-3

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58558

Author : Shtrube

Inst : Not given

Title : Experimental Cultivation of Soviet Varieties of Corn

Orig Pub : Mezhdunar. s.-kh. zh., 1957, No 1, 158-161

Abstract : No abstract given

Card 1/1

48

RUDNEV, A.V.; SHTUCHNYY, B.P.

Optimum design of the cutting tool and turning conditions for
machining nonmetallic glass-fiber laminate-type materials.
Stan. i instr. 34 no.11:23-25 N '63. (MIRA 16:12)

SHTRUK, Georgiy Georgiyevich; METIT, G.Ya., red.; SUKHAREVA, R.A., tekhn.red.

[Time-work--bonus system of wages in experimental production;
practices of the experimental shop of the Moscow Radio Plant]
Povremenno-premial'naya sistema oplaty truda v opytnom proizvodstve;
opyt eksperimental'nogo tsekha Moskovskogo radiozavoda. Moskva,
Mosk.dom nauchno-tekhn.propagandy im. F.E.Dzerzhinskogo, 1957.
11 p. (Peredovoi opyt proizvodstva. Seriya "Mashinostroenie,"
no.3) (MIRA 11:1)

(Wages)

YEGOROVA, N.G.; KUZNETSOVA, V.Ye.; KUPRIKHIN, V.I.; MARTYNOV, B.P.;
RUGAYEVA, V.A.; FEDOROVA, L.P.; CHUYAN, K.I. [deceased];
SHTRUK, G.G., inzh., red.; GORDEYEVA, L.P., tekhn.red.

[General engineering time norms for cold forging] Obshche-
mashinostroitel'nye normativy vremeni na kholodnuiu shtampovku.
Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959.
151 p. (MIRA 13:7)

1. Moscow. Nauchno-issledovatel'skiy institut truda. Tsentral'-
noye byuro promyshlennykh normativov po trudu.
(Forging)

PAPKOV, V.S.; BELOBORODOV, M.G., inzh.; ALEKSANDROVA, G.I.; NOVIKOV, S.P., starshiy normirovshchik. Prinsipal uchastiye: FATEYEVA, T.M., inzh.; BURAKOVA, T.K., tekhnik; SHTRUK, G.G., inzh., red.; EL'KIND, V.D., tekhn. red.

[General machinery industry time norms for use in connection with the establishment of engineering norms for electrical work in the manufacture of instruments; lot and small-lot production] Obshcheye mashinostroitel'nye normativy vremeni dlia tekhnicheskogo normirovaniia elektromontazhnykh rabot v priborostroenii; seriinoye i melkoseriinoye proizvodstvo. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 126 p. (MIRA 14:10)

1. Moscow. Tsentral'noye byuro promyshlennykh normativov po trudu.
2. Nachal'nik sektora sborochnykh i montazhnykh rabot normativno-issledovatel'skoy organizatsii Gosudarstvennogo komiteta Soveta Ministrov SSSR po sudostroyeniyu (for Papkov, Beloborodov, Aleksandrova, Novikov).

(Instrument manufacture) (Factory management)

GYANDZHUNTSEV, Yervand Tatevosovich, kand. ekon. nauk, dots.;
NEDUMOV, Boris Ivanovich, inzh.; ~~SHTRUK, G.G.~~
POMONATSKIY, N.N.; ANDRIANOV, D.P., doktor ekon. nauk,
prof., retsenzent; KUL'BERG, L.M., dots., kand. tekhn.
nauk, retsenzent; GORDON, A.L., red.

[Economics and organization of radio production] Ekono-
mika i organizatsiia radiotekhnicheskogo proizvodstva.
Moskva, Energiia, 1964. 359 p. (MIRA 17:10)

1. Zaveduyushchiy kafedroy ekonomiki promyshlennosti Mo-
skovskogo aviatsionnogo instituta (for Andrianov).
2. Kafedra ekonomiki promyshlennosti Moskovskogo aviatsion-
nogo instituta (for Kul'berg).

IVANOV, Boris Nikolayevich; TKALIN, Ivan Mikhaylovich; SOLNTSEV, Vyacheslav Aleksandrovich; SHTRUM, Viktor L'vovich; SHNEYDER, Roman Izraylevich; MAYANSKIY, Iosif Isaakovich; BORISOVA, Volya Petrovna; ARUFYUNOV, V.O., retsenzent; BLEKHSHEYN, L.I., red.; SOBOLEVA, Ye.M., tekhn.red.

[Technology of the manufacture of electric instruments] Tekhnologiya elektropriborostroeniia. Moskva, Gos.energ.izd-vo, 1959.
590 p. (MIRA 13:4)

(Electric apparatus and appliances)

TKALIN, Ivan Mikhailovich; SHTRUM, Viktor L'vovich; MAYOROV, S.A.,
kand. tekhn. nauk, retsenzent; BLEKHSHTYEN, L.I., inzh., red.;
SOBOLEVA, Ye.M., tekhn. red.

[Automation and mechanization in the manufacture of electrical
instruments] Mekhanizatsiia i avtomatizatsiia v elektropriboro-
stroenii. Moskva, Gosenergoizdat, 1962. 331 p.

(MIRA 15:12)

(Electric instruments) (Automation)

SHTRUM, Ye. A.

TITLE: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963).

SOURCE: Atomnaya energiya, v. 15, no. 3, 1963, 266-267.

ACCESSION NR: AP3008085

germanides and their properties.

T. I. Zhuravlev, A. I. Avgustinnik, V. S. Vidergauz. Precipitation of refractory compounds by the electrophoresis method.

Ye. A. Shtrum. Application of transfer reactions for growing single crystals of refractory compounds.

K. S. Pridantsev, N. S. Solov'yev, Technology of production and the use of nonmagnetic zirconium-base alloys.

T. V. Krasnopevtseva, P. M. Paretskaya. Chromium-base precision alloys.

M. V. Vink. Application of zirconium boride and molybdenum silicide antiemission coatings.

O. P. Kolchin, I. K. Berlin. Synthesis and use of niobium carbide.

Card 5/11

SHTRUM, V. L.

7

*Dependence of the Overvoltage of Electrode Reactions on the Current Density in the Calculation of Concentration Polarization. V. L. Kheifets, M. I. Fainshtein, and V. L. Shtrum (Trudy Sovetskoyey po Elektrometrike 10:10, 1963, 202-211). (In Russian). After a math. discussion of the general case and of the H overvoltage, experimental results are presented for the cathodic reduction of O₂ on smooth Pt in neutral, alkaline, and acid soln.—G. V. E. T.

ETW
RW

SHIRUM, E. L.

HE Electrochemical Properties of Cadmium in Alkaline Solutions, S. A. Rosentveig, B. V. Ershler, B. I. Shirum, and M. M. Ostapina. (*Trudy Sovetskoye Khimii* 1950, 1953, 571-578).—[In Russian]. The solubility of Cd oxides in alkalis increases with an increase in alkali concentration. In both the anodic oxidation of Cd to Cd(OH)₂ and the cathodic reduction of the hydroxide to the metal, a Cd-contg. anion is formed as an intermediate. The change in the capacity of the double layer and the resistance of the Cd electrode during anodic polarisation were measured. The rates of change increased with decreasing alkali concentration and increasing anodic c.d. An oxide coating several layers thick is formed on the Cd. The anodic efficiency decreases on dilution of the alkali, and is inversely proportional to (c.d.)², but the efficiency of the cathode process is almost independent of both concentration and c.d. Only a small part of the vol. of the anodic oxide layer on the Cd participates in the formation of the passive layer.—G. V. E. T.

7

PM

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S. M. V. L.

AUTHORS: Sergeyeva, V. M., Shtrum, Ye. L. 57-12-2/19

TITLE: A Note of the Purification of Indium and the Preparation of the InSb Compound With a High Mobility of the Electrons (Ochistka indiya i polucheniye soyedineniya InSb s bol'shoy podvizhnost'yu elektronov).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 27, Nr 12, pp. 2698-2701 (USSR)

ABSTRACT: The purpose of this investigation was the production of an InSb compound with a great mobility of the electrons for the production of donors for the Hall-EMF (electromotoric force). Preliminary experiments showed, that a zonal purification of the InSb compound, which was obtained by a smelting of these metals, did not furnish the desired results. Therefore an additional purification of the initial substances, essentially of the indium, being the substance, which is most impure, was conducted. For this purpose the method of metal distillation in a vacuum was employed. In spite of the high boiling point (2440° K) of indium it was possible to employ this method for the purification of the indium. For a subsequent removal of silicium and of oxygen

Card 1/4

A Note of the Purification of Indium and the Preparation
of the InSb Compound With a High Mobility of the Electrons.

57-12-2/19

and for a further purification an electrolysis, which was conducted in a weakly acid InCl_3 (80 g In/liter) ($\text{pH}=2$)-solution was employed. In this way a 99.9 % pure indium containing any metallic admixture with a percentage of less than 0,0001 % was obtained in the course of only two operations using only hydrochloric acid as a reagent. For this purpose the indium destined for purification was dissolved in chemically pure hydrochloric acid, which had been twice distilled in a quartz apparatus. The indium purified by the method described and antimony with admixtures was utilized for the synthesis of the InSb compound. The synthesis was conducted in a vertical quartz tube in a carefully purified electrolytic hydrogen jet. In all cases samples with a n-conductivity were obtained without an additional alloying, by immediate smelting. The electron mobility and the concentration of the electrons was determined with the help of measurements of the electric conductivity and of the Hall-effect. The mobility of the electrons computed according to the formula

$$\mu_{\text{electron}} = 0,85 R \text{ amounted in the samples at room}$$

Card 2/4

A Note on the Purification of Indium and the Preparation of the InSb Compound With a High Mobility of the Electrons. 57-12-2/19

temperature from 50.000 to 60.000 $\text{cm}^2/\text{V}\cdot\text{sec}$. A certain relation exists between the mobility of the electrons and their concentration in InSb. It is shown here, that with a decrease of concentration the mobility increases. At concentrations of less than 10^{17}cm^{-3} , however, the mobility depends very little on the electron concentration. For this reason, InSb with a carrier-concentration of the order of magnitude of 10^{16}cm^{-3} may be employed for many practical purposes. In cases, where it is necessary to increase the donor resistance, the InSb must undergo further purification and monocrystals must be produced. A part of the directors of the laboratory V. P. Zhuze and the Head Scientific Collaborator of the Scientific Research Institute Gipro-nikel' D. M. Shvart took part in this investigation. The latter conducted the spectral analysis of indium. There are 4 figures, 2 tables, and 13 references, 2 of which are Slavic.

ASSOCIATION: Institute for Semiconductors AN USSR, Leningrad (Institut poluprovodnikov AN SSSR Leningrad)

Card 3/4

SHTRUM, YE. L.

AUTHORS: Zhuze, V. P., Sergeyeva, V. M., Shtum, Ye. L. 57-2-3/32

TITLE: New Semiconducting Compounds (Novyye poluprovodnikovyye soyedineniya).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 2, pp. 233-236 (USSR).

ABSTRACT: In the investigation of binary semiconducting-compounds with the general stoichiometric formula ABX_2 the authors synthetically produced 4 new compounds of the following composition: $A^I B^{VIII} X_2^{VI}$, where A is either Cu or Ag, B - Fe and X either Se or Te. All four compounds, as was to be expected, are semiconductors. The analysis of the nature of the chemical linkage in these compounds indicates the possibility of a sp^3 -hybridization (mixture of valence states) of the electron-states in the crystal. From the scheme given here is to be seen that the chemical linkage in compounds of this type probably takes place by means of electrons being in the state of sp^3 -hybridization. $CuFeSe_2$, $CuFeTe_2$, $AgFeSe_2$ and $AgFeTe_2$ were produced by direct melting of the components as well as from corresponding binary compounds (which were previously produced by a direct synthesis of the components). The radiographic analysis (performed by R. A. Zvinchuk in the Laboratory for Radiography in the Institute for Semiconductors AS USSR) proved that the samples were monophasic. The cast samples of $AgFeSe_2$

Card 1/4

New Semiconducting Compounds.

57-2-3/32

and AgFeTe_2 were more closely examined. The photographs were taken in the case of $\text{FeK}_{\alpha, \beta}$ -radiation. The roentgenograms were indicated under the assumption of a tetragonal lattice-symmetry. The great deviation of the c/a -values from the quantity ($c/a=2$) ideal for the chalcopyrite-structure as well as the occurrence of indices of the type $h + k + l = 2n + 1$ (forbidden for the space-group D_{2d}^{12} = I 42d) excludes the possibility to ascribe to these compounds the type of the chalcopyrite-structure (to which the analogue of these compounds - AgFeS_2 belongs). The volume relation of the elementary cells in AgFeSe_2 and AgFeTe_2 (elementary cells) agrees with the relation of their molecular weights and the relation of the third power of the radii of Se^{2-} and Te^{2-} . This can only indicate a similarity of the chemical linkage and an exact agreement of the structures with the conceptions from the theory of the densest packing. The melting temperatures T_{melt} , the microstrength H in kg/mm^2 , the electric conductivity in $\text{ohm}^{-1} \cdot \text{cm}^{-1}$, the Hall constant R in cm^3/C and the thermo-electromotive force α in $\mu\text{V}/^\circ\text{C}$ with regard to Pb for all compounds were determined. For several compounds the activation-energy of the current-carriers in eV was determined according to the dependence of the Hall constant on temperature. It is shown that the compounds (which were investigated here)

Card 2/4i

New Semiconducting Compounds.

57-2-3/32

like those of the $A^{III}B^V$ - type in the case of a deviation of their composition from the stoichiometry do not change the type of conductivity. The electric properties of the $AgFeTe_2$ -compound were more closely investigated here. In samples with a current-carrier-concentration of the order of magnitude 10^{18} cm^{-3} the mobility of the electrons is higher than $2000 \text{ cm}^2/\text{V}\cdot\text{sec}$. The dilatometric analysis of $AgFeTe_2$ at $140-150^\circ\text{C}$ shows an isothermal jump of the volume which indicates the occurrence of a first-order phase transition. The modification of the volume in the phase transition. The modification of the volume in the phase transition is very high and amounts to $0,55\%$. The activation-energy of the current-carriers also undergoes great changes at the point of transition. Until the transition-temperature $\Delta E = 0,28 \text{ eV}$, afterwards $= 0,58 \text{ eV}$. At the author's request P. V. Gul'tyayev measured the course of temperature of the thermal conductivity in the $AgFeTe_2$ - and $AgFeSe_2$ -samples with large crystals. The coefficient of thermal conductivity in both compounds at room temperature approaches $0,007 \text{ cal/cm}\cdot\text{degree}\cdot\text{sec}$. There are 5 figures, 2 tables, and 9 references, 5 of which are Slavic.

ASSOCIATION: Institute for Semiconductors AS USSR. Leningrad (Institut poluprovodnikov AN SSSR. Leningrad).

Card 3/4

24(6)

SOV/57-28-10-1/40

AUTHORS:

Zhuze, V. P., Sergeyeva, V. M., Shtrum, Ye. L.

TITLE:

Semiconductor Compounds With the General Formula ABX_2
(Poluprovodnikovyye soyedineniya s obshchey formuloy ABX_2)

PERIODICAL:

Zhurnal tekhnicheskoy fiziki, Vol 28, Nr 10, pp 2093-2108 (USSR), 1978

ABSTRACT:

Ternary compounds with the general formula ABX_2 crystallize in a chalcopyrite structure. They were found for the first time synthesized by H. Hahn (Khan) and coworkers in 1955 (Ref 1). In ABX_2 compounds a formation of the sp^3 hybrid states and the tetrahedric distribution of atoms corresponding to this type of compound is according to the scheme describing the formation of chemical compounds only possible in such cases, where in the compound one of the elements of the third group of the periodic system, or iron, represents the trivalent element B. Antimony and bismuth are incapable of entering such a compound. Fundamental facts, a description of the method, and of the synthesis are presented. Investigations carried out in the X-ray laboratory IPAN by R. A. Zvinchuk showed that the samples of the

Card 1/4

Semiconductor Compounds With the General Formula ABX_2 SOV/57-28-10-1/40

group of $A^I B^{III} X_2^{VI}$ compounds are all of monophase composition and a chalcopyrite structure. The compounds $CuTlTe_2$, $AgTlSe_2$, and $AgTlTe_2$ were for the first time produced synthetically. The X-ray analysis showed that $A^I B^{VIII} X_2^{VI}$ compounds are also of monophase nature. Cast samples of $AgFeSe_2$ and $AgFeTe_2$ were examined more closely with the help of $FeK_{\alpha\beta}$ radiation. The $A^I B^V X_2^{VI}$ compounds: $CuSbSe_2$, $CuBiSe_2$, $AgSbSe_2$, $AgSbTe_2$, $AgBiSe_2$, and $AgBiTe_2$ also proved to be of a monophase nature. Without exception the compounds investigated were found to be semiconductors. In compounds with the elements of the V. group the chemical bond is very likely not realized by electrons in the hybrid state sp^3 , but by electrons, the state of which can be expressed by a pure p-function. An octahedron near-range order of the atoms is characteristic of such a bond, as the p-bonds lie in three directions orthogonal to each other. The crystal structure of the compounds of the V. group confirms the fact that the tetrahedron distribution of atoms distinctive of sp^3

Card 2/4

Semiconductor Compounds With the General Formula ABX_2 SOV/57-28-10-1/40

bonds is not found in these compounds. With this group only the octahedron distribution is realized. The compounds produced synthetically are subject to the general rules which make it possible to separate substances with intrinsic semiconduction from such with a metallic conductivity. The decision between these two alternatives is based upon the conception of the possibility of the formation of covalent bonds. The $A^I B^{III} X_2^{VI}$ compounds satisfy the octet rule by Kossel (Kossel') and the rule by Mooser (Mozer) and Pearson (Pirson) (Ref 19). Finally the participation of the d-electrons of the iron contained in the $A^I B^{VIII} X_2^{VI}$ compounds in the formation of the chemical bond and in the semiconductivity is investigated. The absence of metallic conductivity gives rise to the assumption that the d-electrons of the atoms of the transition metal are existing in discreet states in these compounds and that they form a completely occupied d-zone. It may be assumed that the great distances between the atoms of the transition metal in the crystal are hindering the formation of an incompletely occupied zone. This problem will be the subject of another paper. A. F. Ioffe,

Card 3/4

Semiconductor Compounds With the General Formula ABX_2 SOV/57-28-10-1/40

Member, Academy of Sciences, USSR, showed constant interest in the work and discussed it with the authors. There are 12 figures, 7 tables, and 20 references, 10 of which are Soviet.

SUBMITTED: March 10, 1958

Card 4/4

Shtrum, Ye. L.

82540

S/181/60/002/007/016/042
B006/B070

24.7700

AUTHOR:

Shtrum, Ye. L.

TITLE:

The Semiconducting Properties of the AgFeTe₂ Phase

PERIODICAL:

Fizika tverdogo tela, 1960, Vol. 2, No. 7, pp. 1489-1493

TEXT: In previous papers (Refs. 1 and 2) it was established that in the range between 140 - 150°C the resistance and Hall coefficient change by jumps, which led to the assumption that in this temperature range a phase transformation takes place. A thermal analysis of AgFeTe₂ showed two transitions into the solid phase: at 520°C and 150°C. A metallographic analysis was also made. A number of polycrystalline samples were annealed at 800, 750, 700, 600, 500, 450, 400, and 200°C and then quenched at 0°C. Fig. 1 shows the microphotographs in polarized light of samples that were quenched at different temperatures. Above 500°C, the samples had one phase. For lower temperatures, there was a eutectic decay. An X-ray analysis also showed the difference of the structures of the samples. AgFeTe₂ behaves similarly to CuFeS₂. Since the latter

Card 1/3

82540

The Semiconducting Properties of the
AgFeTe₂ Phase

S/181/60/002/007/016/042
B006/B070

has a large single-phase range between CuFe₂S₃ and Cu₃Fe₄S₆, the existence of such a range is assumed also for AgFeTe₂. To check this, investigations were made on the sections Ag_{1±x}FeTe_{2±x}, AgFe_{1±x}Te_{2±x}, Ag_{1±x}Fe_{1±x}Te₂, and AgFeTe_{2±x} of Ag-Fe-Te systems. To determine the limits of the single-phase range, other compositions were also investigated. The data of metallographic analyses are given in Tables (the number of phases, electrical conductivity σ , and thermo-emf α). The data of the Table and of Fig. 2 (phase diagram) show that the single-phase domain has a wide range. In the range of the AgFeTe₂ phase (with a deviation from the stoichiometric ratio up to 4 at%), the electrical properties do not essentially alter. The conductivity changes from 200 to 1700 ohm⁻¹cm⁻¹, and thermo-emf from -50 to -70 μ v/°C. Fig. 3 shows the dependence of σ and α on the composition; the limits of the single-phase range are noted. In the range of the AgFeTe₂ phase, the compound has the character of a semiconductor, which is explained by the variation in the fraction of d-electrons contributing to chemical binding. Finally, the author thanks

Card 2/3

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E111/E152

24.770 d

AUTHOR: Shtrum, Ye. L.

TITLE: Semiconducting phases of variable composition

PERIODICAL: Referativnyy zhurnal, Khimiya, no. 11, 1962, 51,
abstract 11 B 295. (In the Symposium: 'Vopr.
metallurgii i fiz. poluprovodnikov' ('Problems of
Semiconductor Metallurgy and Physics'), M., AN SSSR,
1961, 24-29)

TEXT: It has been shown that the phase $AgFeTe_2$ of the system
Ag-Fe-Te retains semiconducting properties over a wide range of
compositions. Concentrations corresponding to maximum electrical
conductivity and thermo-e.m.f. do not coincide with the stoichio-
metric ratio. The minimum value of the thermo-e.m.f. is found
near the boundaries of the single-phase region. The retention of
semiconducting properties with a considerable change in the
composition of the phase is explained by the participation in the
bond of a variable quantity of d-electrons of the transition metal.
A survey of the properties of the semiconducting phases of variable
composition is given. 15 references.

Card 1/1 [Abstractor's note: Complete translation.]

S/181/62/004/006/009/051
B125/B104

5.4800

AUTHORS: Petrov, A. V., and Shtrum, Ye. L.

TITLE: Thermal conductivity and chemical bonds in compounds of the type ABX_2

PERIODICAL: Fizika tverdogo tela, v. 4, no. 6, 1962, 1442 .. 1448

TEXT: The dependence of the thermal conductivity and of the specific heats of some compounds belonging to the groups $A^{I,III,VI}B^{I,V,VI}X_2$ and $A^{I,V,VI}B^{I,III,VI}X_2$ on the type of covalent bond was examined. The thermal conductivity, the coefficient of thermal expansion, and other thermal properties of compounds with mainly covalent bonds are related to the anharmonicity of thermal lattice vibrations. This anharmonicity is determined by the configuration of the valency electrons. For this reason, the thermal properties of compounds of the group $A^{I,III,VI}B^{I,V,VI}X_2$ are entirely different from those of the group $A^{I,V,VI}B^{I,III,VI}X_2$. Below 1300K the thermal conductivity of rhombohedral $AgBiTe_2$ crystals is inversely proportional to temperature, but at higher temperatures the

Card 1/3

S/181/62/004,006/009/051
3125/B104

Thermal conductivity and...

effect of energy transfer by electron - hole pairs on the thermal conductivity increases and intrinsic conductivity occurs. The forbidden band width can be determined from the amount and temperature dependence of the additional thermal conductivity resulting from energy transfer by electron-hole pairs. The value of ΔE for rhombohedral AgBiTe_2 is 0.16 eV. If two

kinds of atoms are statistically distributed in the crystal lattice of ABX_2 -type compounds, then the thermal conductivity is almost independent of temperature and the crystal behaves like an amorphous body. As AgBiTe_2 has

an NaCl-type lattice at high temperatures, its thermal conductivity remains constant between 170 and 300°K and rises very little below 170°K. This is attributed to traces of the low-temperature modification of AgBiTe_2 in the samples.

The polymorphous transformation that occurs during the transition to an ordered position of atoms in the crystal lattice leads to the characteristic temperature dependence of the thermal conductivity of crystals. There are 7 figures and 1 table.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors AS USSR, Leningrad)

Card 2/3

Thermal conductivity and...

SUBMITTED: December 25, 1961

S/181/62/004/006/009/051
B125/B104

X

Card 3/3

SHTRUM, Ye. L.

Stability limits of some semiconducting compounds. Ye. L. Shtrum.
(Presented by V. P. Zhuze--25 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,
Kishinev, 16-21 Sept 1963

NENSBERG, Ye.D.; SHTRUM, Ye.L.

Thermal conductivity of AgSbTe_2 . Fiz. tver. tela 5 no.12:3357-3360
D '63. (MIRA 17:2)

1. Institut poluprovodnikov AN SSSR, Leningrad.

SHTRUP, K.N.

Scientific and technical conference at the Institute of Hydraulic and Sanitary
Engineering. Biul.stroi.tekh. 10 no.15:38 0 '53. (MIRA 6:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i sani-
tarno-tekhnicheskikh rabot. (Hydraulic engineering)

SHTRUP, K.N.

Large-panel buildings for public services and cultural facilities.
Bul. tekhn. inform. po stroi. 5 no.4:28 Ap '59. (MIRA 32:8)

(Leningrad--Precast concrete construction)

SHTRUP, K.N.

Polyustrovo Combine erects houses. Biul. tekhn. inform. po
stroit. 5 no.6:25 Ja '59. (MIRA 12:10)
(Leningrad--Apartment houses)

SHTRYMOV, A. I.

Cand. Sci. Tech.

Dissertation: "Study of the Quality of a Surface in Flat Stamping."

10 Feb. 50

Moscow Order of the Labor Red Banner Inst. of Steel

imeni I.V. Stalin

SO Vechery ya Moskva
Sun 71

SHTRYMOV, A.I., kand. tekhn. nauk

New methods for working metals by pressure. Trakt. i sel'khoz mash.
no.9:30 S '64. (MIRA 17:11)

MIKHAYLOVA, Tamara Ivanovna; SHTRYMOV, Aleksey Ivanovich; AL'BERT,
Mark Aleksandrovich; SAMOKHOTSKIY, A.I., inzh., ved. red.;
SOROKINA, T.M., tekhn. red.

[New type of forging rolls. Automatic loading and unloading
of ingots into and out of soaking pits] Kovochnye val'tsy no-
voi konstruktsii. Avtomatizatsiia zagruzki i vygruzki zagoto-
vok iz nagrevatel'nykh pechei. [By] M.A. Al'bert. Moskva, Filial
Vses. in-ta nauchn. i tekhn. informatsii, 1958. 11 p. (Peredo-
voi nauchno-tehnicheskii i proizvodstvennyi opyt. Tema 5.
No. M-58-154/7) (MIRA 16:2)

(Forging machinery)

(Materials handling)

SHTUB, R L.

SHTUB, R. L., (RIGA, USSR)

Die rolle des Nitrofurans in der chirurgischen Behandlung gynakologischer Erkrankungen.

Report submitted for the 3rd World Congress, Intl Federation of Gyneology and Obstetrics, Vienna, Austria, 3-9 Sep 1961.

SHTUBER

HUNGARY / Virology. Human and Animal Viruses

E-2

Abs Jour: Ref Zhur - Biol., No 6, 1958, 23958

Author : Shtuber

Inst : Not given

Title : Utilization of HeLa Cancerous Cells for Investi-
gation of Viruses.

Orig Pub: Orv. hetilap, 1957, 98, No 23, 613-615

Abstract: No abstract.

Card 1/1

SHTUCHKIN, N.

Lieutenants. Kryl. rod. 15 no.12:8-9 D '64.

(MIFA 18:3)

SHTUCHKIN, N.

Interceptors. Kryn. rod. 16 no.7:4-5 JI '65. (MIRA 18:8)

SHTUCHKIN, N.

The squadron in which we serve. Kryl. rod. 16 no.11:
17-18 N '65. (MIFA 18:12)

SHTUCHKIN, N.

Chemistry for aviation. Kryl. red. 16 no.12:16 D '65.
(MIRA 18:12)

L 00630-67 EWT(1)/EWT(m)/T/EWP(v)/EWP(j) IJP(c) RO/RM/WW

ACC NR: AP6013761

SOURCE CODE: UR/0085/65/000/012/0016/0016

AUTHOR: Shtuchkin, N.

ORG: none

TITLE: International exhibition "Chemistry in Industry, Construction, and Agriculture" Soviet Pavilion

SOURCE: Kryl'ya rodiny, no. 12, 1965, 16 and insert opposite page 16

TOPIC TAGS: ^{helicopter, adhesive, aircraft,} chemistry, reinforced plastic, laminated plastic/ Mi-2 helicopter, Ka-26 helicopter, VK-3 adhesive, VK-5 adhesive, An-2M aircraft

ABSTRACT: Applications of various chemical exhibits in the aviation industry are discussed. In particular, oriented glass-reinforced plastic, which has a considerably improved tensile strength, impact resistance, and elasticity, is compared with plain glass reinforced plastic. The oriented product was shown as propellers in helicopters Ka-26 and Mi-2, aerial fairing, and as construction material for cylinders and acid carboys. Another product exhibited was glue VK-3 (phenolic resin) and VK-5, which is used in place of rivets in aerial heating systems for the wing tips. VK-3, a heat-setting glue with excellent physical properties, can be used for gluing metals, plastics, and metals with plastics. VK-5 possesses the same properties as VK-3, with the additional advantage that as a cold-setting adhesive

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Card 1/2

L 00650-67

ACC NR: AP6013761

2

it can be employed under a greater variety of conditions. Panels of triple-layer construction were exhibited: 1 - plywood casing, inner layer - foam plastic reinforced by plywood; 2 - duraluminum casing, inner layer - foam plastic reinforced by duraluminum; 3 - glass-reinforced plastic casing, inner layer foam plastic reinforced with glass-reinforced plastic; and 4 - glass-reinforced plastic casing, inner layer - foam plastic reinforced by plywood. Agricultural application of aviation chemistry was illustrated by helicopters Mi-2, Ka-25, and airplane An-2M, all of which are so outfitted as to serve in spraying fields, orchards, and forests with pesticides or fertilizers. Orig. art. has: 6 figures.

SUB CODE: 07/

SUBM DATE: none

Card 2/2 pb

SHTUCHKIN, N.N., podpolkovnik, voyenny letchik pervogo klassa

Characteristics of the attack on aerial targets during
twilight. Vest.Vozd.Fl. no.1:27-30 Ja '60.
(MIRA 13:8)

(Air) (Warfare)

SHTUGHKIN, N.^{N.}, podpolkovnik, voyenny letchik pervogo klassa

Individual approach in training air pilots. Av.i kosm. 44
no.4:57-61 '62. (MIRA 15:4)
(Flight training)

5(4)

AUTHORS:

Tolmachev, V. N., Lomakina, G. G.,

SOV/76-33-4-9/32
Shtuchkina, L. A.

TITLE:

Spectrophotometric Investigation of the Reaction Between Sodium-1,8-dioxy-2-(2'-oxyazobenzene)-3,6-naphthalene Disu-phonate With Zinc Ions (Spektrofotometricheskoye issledovaniye reaktsii vzaimodeystviya 1,8-dioksi-2-(2'-oksiazobenzol)-3,6-naftalindisul'fonata natriya s ionami tsinka)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 808-812 (USSR)

ABSTRACT:

It was already found (Ref 1) that compound (I) mentioned in the title (the so-called acid chrome dark blue) forms a stable complex compound with magnesium which made it possible to elaborate a colorimetric Mg-determination in aluminum alloys (Ref 2). In the present case the reaction of the dye with zinc was investigated by means of the working method (Refs 1, 3) already described. $ZnSO_4$ was used and the absorption curves of the solutions with (I) were recorded at different zinc concentrations (Fig 1) at a pH = 9.2, 10.3 and 11.5. The diagram shows that all absorption curves intersect each other at one point ($\lambda = 590 \text{ m}\mu$) which indicates a certain equilibrium

Card 1/2

SOV/76-33-4-9/32

Spectrophotometric Investigation of the Reaction Between Sodium-1,8-dioxy-2-(2'-oxyazobenzene)-3,6-naphthalene Disulphonate With Zinc Ions

in the solution. It was found that the maximum optical density is attained at $\text{pH} \approx 10$. The coefficient of molar absorption of the complex compound ($\epsilon = 45,400 \pm 900$) and the value of the instability constant for the radical ZnR_2^{6-} $K = 3.3 \cdot 10^{-11}$

were found from the measurements of the optical density and the pH of the solutions (Table) according to an equation (12) for $\lambda = 570 \text{ m}\mu$. On the basis of the experimental data obtained it is assumed that (I) may be used for the colorimetric determinations of zinc. There are 4 figures, 1 table, and 7 references, 5 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo
(Khar'kov State University imeni A. M. Gor'kiy)

SUBMITTED: September 9, 1957

Card 2/2

BLIZNYUKOV, V.I. [Blyzniukov, V.I.]; SHTUCHNA, V.P.

Structure and parasitocidal action of isomeric chlorine derivatives of 9-(5-diethylamine-2-pentyl)-aminoacridine. Farmatsev. zhur. 16 no.3:12-15 '61. (MIRA 14:6)

1. Kafedra farmatsevticheskoy khimii Khar'kovskogo farmatsevticheskogo instituta.

(INSECTICIDES)

(ACRIDINE)

L 63018-65 EWP(e)/EPA(s)-2/EWT(m)/EPE(c)/EWP(i)/EWA(d)/EWP(t)/EWP(k)/
EWP(z)/EWP(b) Pq-l/Pr-l/Pf-l/Ps-l/Pt-7 IJP(c) MJW/JD/WW/JAJ/WH

ACCESSION NR: AR5012744

UR/0276/65/000/001/B112/B112
621.941.1:621.882

57
56
B

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Svodnyy tom, Abs. 1B705

AUTHORS: Rudnev, A. V.; Shtuchnyy, B. P.

TITLE: Diamond finish-turning of titanium alloy VTZ-1 and fiberglass ST

CITED SOURCE: Tr. Kuybyshevsk. aviats. in-t., vyp. 18, 1963, 131-137

TOPIC TAGS: cutting tool, diamond, turning machine, finishing machine, titanium alloy, fiberglass/ VTZ 1 titanium alloy, ST fiberglass, VK2 cutting tool

TRANSLATION: As a result of investigations on the process of diamond turning, it was established that insignificant deformation of the surface layer 5-8μ deep is produced in turning titanium alloys with diamond cutting tools. The developed design for diamond cutting tools can be recommended for external turning of these materials on multispeed lathes with n = 2000-3000 rpm and s = 0.01-0.1 mm/rev. Maximum rigidity of the lathe is necessary; the vibration frequency of the SD system at the maximum number of rotations must not exceed 30 cps nor the amplitude - 11μ, to exclude the possibility of pricking out the cutting tools. Buffing of
Card 1/2

I 63018-65

ACCESSION NR: AR5012744

the machined surface is up to the 9th class. Durability of the diamond cutting tools with optimum wear of the rear surface $n = 0.14-0.18$ mm is 20 times greater than the durability of hard-alloy cutting tools. In some cases diamond turning of fiberglass ST can be replaced by turning with hard-alloy cutting tools VK2 while maintaining the same buffing of the machined surface. The optimum geometric parameters of diamond cutting tools and of the cutting process are presented. 5 illus. L. Tikhonova

SUB CODE: MM, MT

ENCL: 00

dm
Card 2/2

SHTUCHNYY, B.P., kand.tekhn.nauk

Machining glass reinforced plastics. Vest.mashinostr.
46 no.1:48-51 Ja '66. (MIRA 19:1)

VECHER, A.S.; SHTUKAR', O.K.; NOSONOVICH, L.S.

Biochemical characteristics of potato varieties based on the
composition of cell sap. *Bull. Inst. biol. AN BSSR* no.5:186-195
'60. (MIRA 14:7)
(POTATOES—VAROETES) (PLANTS—CHEMICAL ANALYSIS)

SHTUKAREVA, N. V.

Shtukareva, N. V. -- "On the Periods and Methods of Sowing Perennial Grasses under the Conditions of the Tambov Oblast." Moscow Order of Lenin Agricultural Acad imeni K. A. Timiryazev, Moscow, 1955 (Dissertation for the Degree of Candidate in Agricultural Sciences)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

SAUTIN, V.B.; SHTUKATER, A.L.

Automatic thickness gauge for the sheets of fiberboard. Der. prom.
14 no.1:27 Ja '65. (MIRA 18:4)

SHTUKATER, B.L., inzhener.

Operation of a generator through two phases of a transformer group. Elek.
sta. 24 no.5:27-28 My '53. (MLRA 6:7)
(Dynamics)

VEYTSMAN, M.A.; MIRONENKO, F.K.; SHTUKATER, B.L.

Some problems in designing petroleum refineries. Prom. stroi. 37
no.11:6-9 N '59. (MIRA 13:2)

1. Giprogzneft'
(Petroleum refineries)
(Factories--Design and construction)

SHTUKATURCV, K. I

"Raising the security and longevity of automobiles," Automobile, 1951.

SHTUKATUROV, K.I., inzhener

Guaranteed dependability of an automobile. Standartizatsiia
no.1:63-65 Ja-F '55. (MIRA 8:6)
(Automobiles--Standards)

SHTUKATUROV, K.M., inzh.

Testing the fracturing of coals of the main Kizel anticline
by means of a high pressure jet of water. Izv.vys.ucheb.
zav.; gor. zhur. no.7:19-22 '60. (MIRA 13:7)

1. Gornogeologicheskii institut Ural'skogo filiala AN.
(Kizel Basin--Coal--Testing)
(Hydraulic mining--Testing)

SIDOROV, I.N.; KUKLIN, I.S.; KHRUSHCHEV, G.N.; SHTUKATUROV, K.M.; ROZOV,
B.V.; BUDKOV, V.Ye.; VANYUSHIN, N.M.; GICHKO, V.A.; SUMIN, A.A.

Hydraulic breaking of hards in the Kizel Basin coal mines. Ugol'
37 no.3:16-18 Mr '62. (MIRA 15:2)

1. Gornogeologicheskii institut Ural'skogo filiala AN SSSR (for
Sidorov, Kuklin, Khurshchev, Shtukaturov). 2. Kombinat Kizelugol'
(for Rozov, Budkov, Vanyushin, Gichko, Sumin).
(Kizel Basin--Hydraulic mining)

SHTUKATUROV, K.M.

Breaking coals with high-pressure water jets. Trudy Inst. gor. dela
UFAN SSSR no.3-19-22 '63. (MIRA 16:3)
(Kizel Basin--Hydraulic mining)

KUKLIN, I.S.; SHTUKATUROV, K.M.

Recent developments in methods of studying the structure of hydraulic
giant jets. Trudy Inst. gor. dela UFAN SSSR no.3:63-69 '62.

(MI¹⁴A 16:3)

(Hydraulic mining—Equipment and supplies)

(Jets)

SHTUKATUROV, K.M.; KUKLIN, I.S.

Basic parameters and breaking capacity of a jet. Trudy Inst. gor. dela
UFAN SSR no.3:71-81 '62. (MIRA 16:3)
(Hydraulic mining—Equipment and supplies) (Jets—Fluid dynamics)

SETUKATUROV, K.M.; KRUSHCHEV, G.N.

Hydraulic method of working thin and medium-thick seams under the conditions of the Kizel Basin. Trudy Inst. gor. dela UFAN SSSR no.3:115-118 '62. (MIRA 16:3)

(Kizel Basin--Hydraulic mining)

SHTUKENBERG, Ye.K.

New lichen species of the genus *Cladonia* (Hill.) Hoffm. Bot.mat.
Otd.spor.rast. 11:12-18 Ja '56. (MLRA 9:11)
(Soviet Far East--Lichens)

5.11 TUKIN, A.
SHTUKIN, A.

Hundreds of new homes on vacant land. Gor.khoz.Mosk. 31 no.10:15
0 '57. (MIRA 10:10)

(Moscow--Apartment houses)

ARANOVSKIY, M.G.; ORLENKO, N.I.; SHEPKIN, L.S.; IYERUSALIMSKIY, A.M., dotsent,
redaktor.

[Drafting in machine construction] Cherteshnoe khoziaistvo v mashinostroenii.
Leningrad, Nauchno-tekhn. izd-vo mashinostroit. lit-ry [Leningradskoe otd-nie]
1953. 103 p. (MLRA 6:10)
(Machinery--Drawing) (Drawing-room practice)

SHTUKIN, L.V.

PHASE I

TREASURE ISLAND BIBLIOGRAPHIC REPORT

Call No.: AF574255
AID 132 - I

BOOK

Authors: BAYRASHEVSKIY, A.M., Eng. Capt. of the Navy, ALEKSANDROVSKIY, V.V.,
ASHCHEULOV, V.P., GEORGIONOV, K.V., DITRIKH, K.F., SELENINOV, BLV.
and SHTUKIN, L.V.

Full Title: TEXTBOOK FOR SHIP'S RADIO OPERATOR (2nd ed.)

Transliterated Title: Uchebnoe posobiye dlya sudorogo radio-operatora

Publishing Data

Originating Agency: Main Administration of Educational Institutions of the
Ministry of the Merchant Marine

Publishing House: Publishing House "Morskoy Transport"

Date: 1952

No. pp.: 660

No. of copies: 6,000

Editorial Staff

Editor: Sandler, M.V.

Editor-in-Chief: Bayrashavskiy, M.A.

Tech. Ed.: Flaun, M.Ya.

Appraiser: None.

Text Data

Coverage: The textbook presents a general introduction to various phases of radio science from basic electromagnetic principles and description of early types of spark and vacuum tube radio-apparatus to recent types of receiving and sending radio installations, direction finders, electro-acoustical, amplifying and recording equipment. The final part of the book is related to general ship regulations for radio signal exchanges, minor repairs and adjustment of the radio apparatus and ship radio

1/2

SHTUKIN, I.V.

Uchebnoe posobiye dlya sudorogo radio-operatora

AJD 132 - I

Installation. The last chapter of this part gives general information on navigation, astronomy, meteorology and ship construction.

Comments: The book supplies only general and elementary information for the ship's radio operator and does not deal with radar and other modern equipments.

Purpose: The textbook is approved by the Main Administration on Educational Institutions of the Ministry of the Merchant Marine for radio-operators, particularly for self-study.

Facilities: The book is the collective work of teachers of the Leningrad Marine College and of the special courses for the commanding staff of the Merchant Marine.

No. of Russian and Slavic References: 32

Available: A.I.D., Library of Congress.

2/2

SHTUKIN, V.

Marksmen of Tula. Voen.znan. 25 no.6:3 Je '59.
(MIRA 12:12)

1. Sekretar' komiteta Vsesoyuznogo Leninskogo kommunisticheskogo
soyuza molodezhi Tul'skogo oruzheynogo zavoda.
(Tula--Rifle practice)

SHTUKIN V.V.

DONSKOY, A.P., inzh.; SAPGIR, S.M., inzh.; SHTUKIN, V.V., inzh.

Manufacturing prestressed precast concrete beams with a 30
meter span. Biul.tekh.inform. 3 no.3:3-5 Mr '57. (MIRA 10:10)
(Girders) (Precast concrete construction)

MOLGHANOV, Roman Semenovich; ~~SHTUKIN, V.V.~~ inzh., nauchnyy red.;
KAPLAN, M.Ya., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Making precast reinforced concrete construction elements
and details] Izgotovlenie sbornykh zhelezobetonnykh
konstruktsii i detalei. Leningrad, Gos.izd-vo lit-ry po
stroit., arkhitekt. i stroit.materialam, 1959. 199 p.

(MIRA 12:8)

(Precast concrete)

VEBER, M.A., kand. tekhn. nauk, dots.; MOLCHANOV, R.S., kand. tekhn.
nauk, dots.; SHTUKIN, V.V., inzh., nauchnyy red.; FENOVA,
Ye.M., red. izd-va; PUL'KINA, Ye.A., tekhn. red.

[Enterprises of the construction industry] Predpriatia stroitel'-
noi industrii. Leningrad, Gos. izd-vo lit-ry po stroit., arkhit., i
stroit. materialam, 1961. 326 p. (MIRA 14:9)
(Construction industry)

SHTUKINA, T.S.; ZALYUBOVINA, G.T.

Perseids in 1961. *Binl. VAGO no.33:9-10 '63.* (MIRA 16:4)

1. Moskovskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo
obshchestva, meteornyy otdel.
(Meteors--August)

TSVETKOV, V.I.; SHTUKINA, T.S.

Number of δ -aquarides in 1962. Bul. VAGO no.34:45-46 '63.
(MIRA 17:4)

1. Moskovskoye otdeleniye Vsesoyuznogo astronomogeodezicheskogo
obshchestva.

SHATKIN, E. N. BERG, Yu. M.

IRML

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RADIOACTIVE ISOTOPES IN MEDICINE AND BIOLOGY. (U)

V. K. Modestov, L. I. Ivanov, Yu. M. Shukkenberg, E. F. Romantsev, and E. I. Vorobey Moscow, Medgiz, 1955.

(In Russian) (Book on display at Geneva Conference)

A practical guide for physicians and biologists working with radioactive isotopes. Part I contains elementary data on nuclear physics, deals with the problems of the interaction between radiation and substance, and with measurement techniques. Part II dwells on the use of radioactive isotopes for tagging. The concluding chapters contain data on protection against radioactivity and on equipping laboratories. Supplements for reference purposes are attached. (publisher's note)

U-31613, 20 Jan 56 ^{RMZ} Review ⁽⁴⁾

USSR/Human and Animal Physiology. Action of ruy...

Abs Jour: Ref Zhur-Biol., No 8, 1958, 37007.

Author : Shtukkenberg, U.M.

Inst :

Title : Laws Regulating the Activity of Excretion from Concentrations of Active Materials Contained within the Body.

Orig Pub: Atom energiya, 1956, No 5, 124-129.

Abstract: When excretion of radioactivity takes place according to the exponential law, the ratio between the activity of the excreta and the activity within the organism is only a function of the constant of biological excretion and is not related to the constant of the radioactivity loss. (lysis). In this case the relative decrease of radioactivity in the organism during

Card : 1/2

Shtukenberg, Yu. M.

**THE DEPENDENCE OF THE ACTIVITY OF SECRETORS
ON THE CONCENTRATION OF RADIOACTIVE MATTER
WITHIN AN ORGANISM. Yu. M. Shtukenberg. Soviet J.
Atomic Energy No. 6, 80 (1958).**

Detailed calculations of the dependence of the activity of
excretion on the amount of radioactive matter contained
within an organism are given, when the excretion of this
matter follows the exponential law. (auth)

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SOV/112-59-3-5331

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 3, p 148 (USSR)

AUTHOR: Shtukkenberg, Yu. M., Kalugin, K. S., and Bobkov, A. I.

TITLE: Electric Precipitator for Determining Concentration of Active Aerosols
(Elektrofil'tr dlya opredeleniya kontsentratsii aktivnykh aerorozley)

PERIODICAL: V sb.: Issled. v obl. dozimetrii ioniziruyushchikh izlucheny. M.,
AN SSSR, 1957, pp 132-153

ABSTRACT: Measurement of active-aerosol concentration in air is conventionally performed by pumping air through a paper filter and by subsequently determining its activity. The fundamental disadvantages of this method are: (1) low speed of pumping resulting in a long measurement time (particularly with small concentrations when this time is as long as several hours); (2) self-absorption of the radiation in paper; (3) low accuracy of measurement due to the fact that the filter traps different-size particles differently. Design of an electric precipitator is described which is based on the corona discharge and

Card 1/2

SOV/112-59-3-5331

Electric Precipitator for Determining Concentration of Active Aerosols

which is free from the above disadvantages. Aerosols charged in the corona region are deposited on a detachable target which has a reverse-sign potential; then, the target activity is measured. A simplified theory of such a precipitator is examined. Experiments have shown that various sizes of aerosols are effectively deposited on the precipitator target; the efficiency, i. e. , the ratio of the number of deposited aerosols to the total number of aerosols entering the precipitator, amounts to a few dozens per cent and little depends on the aerosol size.

L. V. M.

Card 2/2

ШТУККЕНБЕРГ, Ю. М.

PHASE I BOOK EXPLOITATION SOV/1297

Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izucheniyu y narodnom khozyaystve i nauke, Moscow, 1957

Polyucheniye izotopov. Koshchnyye gamma-ustanovki. Radiometriya i dozimetriya; trudy konferentsii... (Isotope Production and High-energy Gamma-Radiation Facilities. Radiometry and Dosimetry; Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy (Science) Moscow, Izd-vo AN SSSR, 1958, 293 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR; OIavnoye upravleniye po ispol'zovaniyu atomnoy energii SSSR.

Editorial Board: Prolov, Yu.S. (Resp. Ed.), Zhavoronkov, M.M. (Deputy Resp. Ed.), Aglintsev, K.K., Alekseyev, B.V., Bochkarev, V.V., Lashchinskiy, N.I., Malkov, T.P., Sinitaym, V.I., and Popov, G.L. (Secretary); Tech. Ed.: Kovichkov, H.D.

PURPOSE: This collection is published for scientists, technologists, persons engaged in medicine or medical research, and others concerned with the production and/or use of radioactive and stable isotopes and radiation.

COVERAGE: Thirty-eight reports are included in this collection under three main subject divisions: 1) production of isotopes 2) high-energy gamma-radiation facilities, and 3) radiometry and dosimetry.

TABLE OF CONTENTS:

PART I. PRODUCTION OF ISOTOPES

Prolov, Yu.S., V.V. Bochkarev, and Ye.Ye. Kulish. Development of Isotope Production in the Soviet Union. This report is a general survey of production methods, apparatus, raw materials applications, investigations, and future prospects for radio isotopes in the Soviet Union.

Card 2/12

Vorobyeva, L.V., K.S. Kalugin, and Yu.M. Shtukkenberg. Set-up for Measuring Individual Doses of Gamma-rays Within a Wide Range

228

Shtukkenberg, Yu.M., and V.I. Drobot. Employing a π -Counter for Absolute-Measurement of Activity

270

Shtukkenberg, Yu.M., and V.I. Drobot. A Method Employing a π -Counter for Registering Internal-conversion Electrons

278

Tissen, M.Yu. A Scintillation π -Counter With Stilbene Crystals for Absolute Measurement of Beta-activity

285

This article describes a counter for the absolute measurement of beta-activity from 0.15 to 3.5 Mev. The instrument uses two standard stilbene crystals (30 mm diameter, 0 mm height) and photomultiplier PEU-19 or FEU-29. Correction factors are discussed and data on activity measurement are plotted.

AVAILABLE: Library of Congress

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4-10-59

Card 12/12

BOGDANOV, K. M., SHILNOV, M. I. and SHTUKKENBERG, Y. M.

"Some Results of Using a Tritium Tag in Radiobiological Research."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sept 58.

ISHTUKKENBERG, Yu.-M.

21(4): 17(0)
PHASE I BOOK EXPLOITATION 807/2808
International Conference on the Peaceful Uses of Atomic Energy, 24, Geneva, 1958
Doblye sovershkh uchenykh; radiobiologiya i radiatsionnaya meditsina (Report of Soviet Scientists; Radiobiology and Radiation Medicine) Moscow, Izdat. vpr. po iopol'noy atomnoy energii pri SSSR, 1958. 429 p. 5,000 copies printed. (Series: Vozrozh. Mezhnatsionalnaya konferentsiya po mirnomu ispol'novaniyu atomnoy energii. Tom 5)

General Ed.: A.V. Lebedinskiy, Corresponding Member, USSR Academy of Medical Sciences; Ed.: Z.S. Shirikova) Techn. Ed.: Ye.I. Mazal.

PURPOSE: This book is intended for physicians, scientists, and engineers as well as for professors and students at venues where radiobiology and radiation medicine are taught.

COVERAGE: This is Volume 5 of a 6-volume set of reports delivered by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy, held on September 1-11, 1958 in Geneva. Volume 5 contains 32 reports edited by Candidates of Medical Sciences S.V. Levinitskiy and Y.V. Sedov. The reports cover problems of the biological effects of ionizing radiation, future consequences of radiation in small doses, genetic effects in radiation, treatment of radiation sickness, uses of radioactive isotopes in medicine, problems of radiation protection, diagnostic and prognostic and therapeutic purposes, cell morphology, or use of isotopes for diagnosis, their intake by plants, and their storage in plants and foodstuffs. References accompany each report.

Reports of Soviet Scientists (Cont.) 807/2808

Table listing reports by authors and page numbers, including topics like 'Some Results of Labeling With Tritium in Biological Studies', 'Special Features of Albumin Synthesis in the Plant and Animal Cell', 'Control Mechanisms of the Thyroid Gland Functions by the Cerebral Cortex', etc.

Shornik radioaktivnoyakh i dosimetriyebnikh metodakh (Collection of Radiochemical and Dosimetric Methods) Moscow, Medgiz, 1959. 459 p. Errata ally inserted. 9,000 copies printed.

Eds. (title page): E.G. Gusev, G.S. Margulis, A.M. Masny, E.Yu. Furzenbo, Yu.M. Shukhmanberg; Ed. (Inside book): V.I. Labazov; Tech. Ed.: A.I. Kharova.

PURPOSE: This collection of articles is intended for physicists, sanitation and public health doctors, chemists and other specialists working in radioactive dosimetry.

CONTENTS: This work discusses the following subjects: (1) principles of organizing sanitation and dosimetric control in institutions where work is carried on with radioactive substances; (2) radio-chemical and chemical methods for determining certain radioactive substances in samples of air, water, soil and foodstuffs; (3) physical methods of measuring contamination of the air by radioactive gases and aerosols, and methods for determining the level of contamination of working surfaces, clothes and leather coverings; (4) methods of measuring external stresses of α - and gamma-radiation, and methods of individual dosimetric monitoring; (5) absolute and relative methods of measuring the activity of solid and liquid radioactive sources. There are sections dealing with methods of calculating the dose of α -radiation, and methods of measuring the activity of α -sources, and methods of measuring the activity of β -sources in the solution of foodstuffs. Sectionary regulations observed during transportation, storage, and handling of radioactive substances are discussed, as well as the permissible level of ionizing radiation. The editors thank Yu.V. Slivintsev and P.P. Shirshov. Referenced paper at the end of each chapter.

Ch. V. Physical Methods of Determining Contamination of the Ambient Atmosphere Due to Radioactive Aerosols and Gases

- Introduction (Yu.M. Shukhmanberg) 154
- 1. Determination of the active concentration of naturally active aerosols (G.Y. Gorshkov, Y.Y. Zolob, V.I. Katsenpor and Yu.M. Pozdnyakov) 154
- 2. Determination of the radioactive dust content of air with the aid of a beta-cell (V.Y. Zolob) 162
- 3. Determination of the concentration of active aerosols with the aid of the electric precipitator type EP-2 (Yu.M. Shukhmanberg and K.G. Kalugin) 169
- 4. Measurement of active aerosols with the aid of liquid filters (B.M. Bemy and Yu.M. Shukhmanberg) 185
- 5. Radiation metering of beta-active gases by means of an end-window counter (L.M. Nikhalov and A.B. Turkin) 195
- 6. Determination of effluent air contamination due to radioactive gases and aerosols (B. Pozova, B.M. Bemy and Yu. Shestakov) 202
- 7. Measurement of the concentration of radon in the air (V.I. Kuznetsov and V.M. Kozubov) 211
- 8. Automatic control of the radon content of air (Yu.M. Shukhmanberg and Yu.M. Kozubov) 213
- 9. Measurement of the concentration of active gases in the air by means of a beta-cell chamber (K.M. Rogoznikov, M.I. Shonbaev and Yu.M. Shukhmanberg) 215
- 10. Determination of concentration of beta-active gases in the air with the aid of a cylindrical counter placed in a chamber of fixed volume (V.V. Kochharov) 221

Recommended literature

- Ch. VI. Methods of Measuring the Level of Contamination of Surfaces
 - Introduction (Yu. M. Shukhmanberg) 239
 - 1. Instruments for measuring the maximum permissible level of contamination of surfaces by active substances (Yu.M. Shukhmanberg) 239
 - 2. Calibration of instruments for measuring the contamination of surfaces by active substances (Yu.M. Shukhmanberg) 245
 - 3. Measuring the contamination of fixed structures (equipment and installations) (Yu.M. Shukhmanberg) 252
 - 4. Checking special clothing for radioactive contamination (B.M. Bemy and M. Sanaoritskiy) 256
 - 5. Determining the radioactive contamination of the hands and body (Yu.M. Shukhmanberg) 266
 - 6. Determining the radioactive contamination of surfaces by the same method (B.M. Bemy, Yu. Shestakov and K. Orlova) 271
- Ch. VII. Methods of Measuring External Stresses of α and Gamma Radiation (U.S. Margulis and B.M. Bemy) 279
 - Introduction 279
 - 1. Organization of dosimetric monitoring 283
 - 2. Calibration of dosimeters 291

SHUKHMANBERG, Yu.M.

BOGDANOV, K.M.; SHAL'NOV, M.I.; SHTUKKENBERG, Yu.M.

Studying the dynamics of tritium oxide metabolism in the organism.
Biofizika 4 no. 4:437-445 '59. (MIRA 14:4)
(TRITUM) (METABOLISM)

BOGDANOV, K.M.; SHAL'NOV, M.I.; SHTUKKENBERG, Yu.M.

Periodicity in the exchange of hydrogen between organic structures
and water in the organism. Biofizika 4 no.5:582-587 '59.
(MIRA 14:6)

(TRITIUM)

(METABOLISM)

PHASE I BOOK EXPLOITATION

SOV/4117

Radiatsionnaya meditsina; posobiye dlya vrachey i studentov (Radiation Medicine; Textbook for Physicians and Students). Moscow, Atomizdat, 1960. 313 p. 6,000 copies printed.

Eds.: A.I. Burnazyan, Docent and A.V. Lebedinskiy, Professor; Tech. Ed.: N.A. Vlasova.

PURPOSE: This textbook is intended for students in medical schools and physicians interested in the applications of radioactive elements in biology and medicine.

COVERAGE: This is a handbook on the applications of radioactive substances in the diagnosis and treatment of diseases, basic methods in the prevention of radiation disease, and existing methods of dosimetric control. Data used in the book is based on the results of experimental research in the field of radiation pathology, material from foreign sources containing data on the aftereffects of the atomic explosions in Japan, and on clinical studies of accidents at atomic installations in the USA. No personalities are mentioned. There are no references.

Card 1/8

Radiation Medicine; Textbook for Physicians and Students

SOV/4117

TABLE OF CONTENTS:

Preface (Lebedinskiy, A.V., Professor, Corresponding Member, Academy of Medicine USSR)	3
Ch. I. Physics and Dosimetry of Penetrating Radiation (Shtukkenberg, Yu.M., Candidate of Technical Sciences)	5
Structure of the atom	5
Structure of the nucleus (nuclear transmutations)	5
Discovery of radioactivity	8
Natural transmutation of nuclei	11
Artificial transmutation of nuclei	14
Law of radioactive decay	20
Nuclear forces	24
Binding energies of particles in the nucleus	25
Generation of nuclear energy	27
Interaction of radiation with matter	33
Interaction of charged particles with matter	33
Interaction of γ -quanta with matter	35
Interaction of neutrons with matter	36

Card 2/8

SHTUKKENBERG, YU. M.

PHASE I BOOK EXPLOITATION SOV/5786

Belousova, Inna Mikhaylovna, and Yuriy Mikhaylovich Shtukkenberg

Yestestvennaya radioaktivnost' (Natural Radioactivity) Moscow, Medgiz, 1961. 218 p. 4000 copies printed.

Ed. (Title page): A. I. Burnazyan; Ed.: U. Ya. Margulis; Tech. Ed.: N. K. Zuyeva.

PURPOSE : This book is intended for physicians, physiologists, hygienists, biologists, and the general reader interested in the effects of natural radioactivity on the human organism.

COVERAGE: The book summarizes the great volume of material on natural radioactivity and its effects on man under normal living conditions. Individual chapters include material on radioactive fallout, the estimation of natural radioactivity in food products and drinking water, and tissue doses from the different sources of natural radiation. The preface was

Card 1/4

Natural Radioactivity

SOV/5786

written by A. I. Burnazyan; Yu. M. Shtukenberg wrote Chs. I to V, X to XII, XIV to XVII; I. M. Belousova wrote Chs. VI to XVIII; these latter two wrote Ch. XIII jointly. No personalities are mentioned. There are 150 references: 71 Soviet, 73 English, and 6 German.

TABLE OF CONTENTS:

Preface	3
Introduction	5
Ch. I. Structure of the Nucleus and Radioactive Transmutations	11
Ch. II. Interaction of Radiation With Matter	19
Ch. III. Absorbed Dose and Relative Biological Effectiveness of Radiation	30

Card 2/4

S/205/61/001/004/030/032
D298/D303

AUTHOR: Drobot, V. I., and Shtakkenberg, Yu. M.

TITLE: A differential calorimeter for measuring the activity and mean energy of beta-particles in liquid and pulviform radioactive preparations

PERIODICAL: Radiobiologiya, v. 1, no. 4, 1961, 627-632

TEXT: In 1954 a differential calorimeter based on thermal resistances was designed to determine the absolute activity of radioactive preparations and the mean energy of beta-particles. The schematic diagram of the calorimeter is shown as well as a section of the calorimeter. The calorimeter has a sensitivity of $1.85 \cdot 10^5 \text{ mm/w} \approx 7.7 \cdot 10^5 \text{ mm}\cdot\text{sec/cal}$. Tests revealed that the accuracy of measurement was $\pm 2 - 3\%$ for preparations with an activity of $50 - 100 \mu\text{s}$ with $\bar{E} > 0.1 \text{ Mev}$. [Abstracter's note: \bar{E} —mean energy of beta-particles expressed in Mev.] Experiments confirmed that the calorimeter's sensitivity was in linear

Card 1/2

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A differential calorimeter...

S/205/61/001/004/030/032
D298/D303

dependence with I , R and α . [Abstracter's note: α — temperature coefficient of thermal resistance.] It was found that measurements could be made with current and thermal resistant values whose thermal effect in the calorimeter was a 100 times and more greater than the thermal effect being measured. Further research revealed that the sensitivity of the calorimeter could be improved by increasing I , R and α . There are 6 figures, 1 table and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

SUBMITTED: January 6, 1961

Card 2/2



ALEKSEYEVA, O.G.; BIBKOVA, A.F.; VYALOVA, N.A.; IVANOV, A.Ye.; KRAYEVSKIY, N.A.; KURSHAKOV, N.A.; PARAMONOVA, N.V.; PETRUSHKOV, V.N.; SNEGIREVA, V.V.; STUDENIKINA, L.A.; SHTUKKENBEEG, Yu.M.; SHULYATIKOVA, A.Ya.; LANDAU-TYLKINA, S.P., red.; YAKOVIEVA, N.A., tekhn. red.

[A case of acute radiation sickness in man] Sluchai ostroi luchevoi bolezni u cheloveka. Moskva, Medgiz, 1962. 149 p.
(MIRA 16:2)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Kurashkov).

(RADIATION SICKNESS)

SHUKREBERG, Ya.M.

Symposium on measuring the amount of radioisotopes in the
human organism. Atom. energ. 12 no.4:345-350 Ap '62.

(MIRA 15:3)

(Radioactivity--Measurement)

SHTUKKENBERG, Yu. M.; KALUGIN, K. S.; DROBOT, V. I.

"Facilities with Water Shielding for Measuring External Radiation from Human Subjects."

paper presented at Symp on Assessment of Radioactive Body Burdens in Man, Heidelberg, W. Germany, 11-16 May 64.

DREBOT, V.I.; KALUGIN, K.S.; SHTUKKENBERG, Yu.M.

Device for the measurement of external human radiation. Med.
rad. 8 no.10:77-82 O '63. (MINA 17:6)